What is claimed is:

1. A heat exchanger, comprising:
   a) a core having a length, a width perpendicular to said length and a heat transfer surface extending along said length and said width;
   b) a plurality of first manifolds formed in said core and extending along said length;
   c) a plurality of second manifolds formed in said core and extending substantially co-extensively, and located alternatingly across said width, with said plurality of first manifolds; and
   d) a plurality of interconnecting channels formed in said core and spaced from one another along said length, each of said plurality of interconnecting channels having a first end fluidly communicating with at least one of said plurality of first manifolds at a location distal from said heat transfer surface and a second end fluidly communicating with at least one of said plurality of second manifolds.

2. A heat exchanger according to claim 1, wherein the number of said first manifolds in said core and the number of second manifolds in said core differ by one.

3. A heat exchanger according to claim 1, wherein each of said interconnecting channels fluidly communicates with one of said plurality of first manifolds at said first end and fluidly communicates with two of said plurality of second manifolds at said second end.

4. A heat exchanger according to claim 1, wherein at least some of said plurality of interconnecting channels each contain at least one flow partition.

5. A heat exchanger according to claim 1, wherein at least some of said plurality of interconnecting channels each contain at least one flow plenum.

6. A heat exchanger according to claim 1, wherein said core includes a stacking axis extending along said length and comprises a plurality of plates stacked with one another along said stacking axis to form said core.

7. A heat exchanger according to claim 6, wherein said plurality of plates comprises a plurality of heat-exchanger plates each having at least one fin.

8. A heat exchanger according to claim 7, wherein said plurality of plates further comprises a plurality of spacer plates located alternatingly with said plurality of heat-exchanger plates, each of said spacer plates defining at least a portion of each of said plurality of interconnecting channels.

9. A heat exchanger according to claim 1, wherein each of said plurality of first manifolds and each of said plurality of second manifolds has a generally triangular cross-sectional shape.

10. A heat exchanger according to claim 1, wherein said heat-transfer surface has a heat-transfer capacity that varies over said heat-transfer surface and each of said plurality of interconnecting channels has a cross-sectional flow area wherein at least some of said cross-sectional flow areas are different from others of said cross-sectional flow areas to vary said heat transfer capacity.

11. A heat exchanger according to claim 1, wherein said core has a first volume, said plurality of first manifolds define a second volume and said second manifolds define a third volume, the sum of said second and third volumes being at least 20% of said first volume.

12. An assembly, comprising:
    a) a heat exchanger comprising:
        i) a core having a length, a width perpendicular to said length and a heat transfer surface extending along said length and said width;
        ii) a plurality of first manifolds formed in said core and extending said length;
        iii) a plurality of second manifolds formed in said core extending said length and located alternatingly with said plurality of first manifolds across said width; and
        iv) a plurality of interconnecting channels formed in said core and spaced from one another along said length, each of said plurality of interconnecting channels having a first end fluidly communicating with at least one of said plurality of first manifolds at a location distal from said heat transfer surface and a second end fluidly communicating with at least one of said plurality of second manifolds; and
    b) a device in thermal communication with said heat-transfer surface.

13. An apparatus according to claim 12, wherein said device is a microelectronic device.

14. An apparatus according to claim 13, wherein said microelectronic device is a microprocessor.

15. An apparatus according to claim 12, further comprising a fluid re-circulation system in fluid communication with said plurality of first manifolds and said plurality of second manifolds.

16. A heat-transfer circuit, comprising:
   a) a heat exchanger comprising:
      i) a core having a length, a width perpendicular to said length and a heat transfer surface extending along said length and said width;
      ii) a plurality of first manifolds formed in said core and extending said length;
      iii) a plurality of second manifolds formed in said core extending said length and located alternatingly with said plurality of first manifolds across said width; and
      iv) a plurality of interconnecting channels formed in said core and spaced from one another along said length, each of said plurality of interconnecting channels having a first end fluidly communicating with at least one of said plurality of first manifolds at a location distal from said heat transfer surface and a second end fluidly communicating with at least one of said plurality of second manifolds; and
   b) a fluid re-circulation system in fluid communication with each of said plurality of first manifolds and said plurality of second manifolds.

17. A heat exchanger, comprising:
   a) a core having a length and a first volume;
   b) a plurality of first manifolds extending along said length and having a second volume;
   c) a plurality of second manifolds extending substantially coextensively with said plurality of first manifolds and having a third volume; and
   d) a plurality of interconnecting channels each fluidly connecting at least one of said plurality of first manifolds with at least one of said second manifolds;
   e) wherein the sum of said second volume and said third volume is at least 20% of said first volume.

18. A heat exchanger according to claim 17, wherein the sum of said second volume and said third volume is at least 30% of said first volume.

19. A heat exchanger, comprising:
   a) a core having a stacking axis and a length extending along said stacking axis;
   b) at least one first manifold formed within said core and extending said length;
   c) a least one second manifold formed within said core and extending said length;

d) a plurality of interconnecting channels formed within said core and spaced from one another along said length, each of said plurality of interconnecting channels having a first end fluidly communicating with said at least one first manifold and a second end fluidly communicating with said at least one second manifold; and

e) a plurality of plates stacked along said stacking axis, each of said plurality of plates having a first aperture defining a portion of said first manifold and a second aperture defining a portion of said second manifold, at least some of said plates each having at least one space defining at least one of said plurality of interconnecting channels.

20. A heat exchanger according to claim 19, wherein said core has a width perpendicular to said length, the heat exchanger further comprising a plurality of first manifolds extending said length and a plurality of second manifolds extending said length and located alternatingly with said plurality of first manifolds across said width, each of said plurality of interconnecting channels fluidly communicating with one of said plurality of first manifolds and at least one of said plurality of second manifolds.

21. A heat exchanger according to claim 20, wherein the number of said first manifolds in said core and the number of second manifolds in said core differ by one.

22. A heat exchanger according to claim 21, wherein said second end of each of said interconnecting channels is in fluid communication with two of said second manifolds.

23. A heat exchanger according to claim 19, wherein at least one of said at least one first manifold and said at least one second manifold has a generally triangular cross-sectional shape.

24. A heat exchanger according to claim 19, wherein said core comprises a plurality of first heat-exchanger plates and a plurality of spacer plates located alternatingly with said plurality of first heat-exchanger plates along said length, said spacer plates defining portions of said plurality of interconnecting channels.

25. A heat exchanger according to claim 24, wherein said core further comprises a plurality of second heat-exchanger plates each located intermediate a corresponding one of said plurality of first heat-exchanger plates and a corresponding one of said plurality of spacer plates and defining a flow plenum.

26. A heat exchanger according to claim 19, wherein said core comprises a plurality of heat-exchanger plates located immediately adjacent one another, at least some of said plurality of heat-exchanger plates including a recess having a first portion defining at least one of said plurality of interconnecting channels.

27. A heat exchanger according to claim 26, wherein at least some of said heat-exchanger plates that have at least one first portion further include at least one second portion defining a flow plenum.

28. An apparatus, comprising:
   a) a heat exchanger including:
      i) a core having a stacking axis, a length extending along said stacking axis and a heat-transfer surface extending said length;
      ii) at least one first manifold formed within said core and extending said length;
      iii) a least one second manifold formed within said core and extending said length;
      iv) a plurality of interconnecting channels formed within said core and spaced from one another along said length, each of said plurality of interconnecting channels having a first end fluidly communicating with said at least one first manifold and a second end fluidly communicating with said at least one second manifold; and
      v) a plurality of plates stacked along said stacking axis, each of said plurality of plates having a first aperture defining a portion of said first manifold and a second aperture defining a portion of said second manifold, at least some of said plates each having at least one space defining at least one of said plurality of interconnecting channels; and
   b) a device in thermal communication with said heat-transfer surface.

29. An apparatus according to claim 28, wherein said device is a microelectronic device.

30. An apparatus according to claim 29, wherein said microelectronic device is a microprocessor.

31. An apparatus according to claim 28, further comprising a fluid re-circulation system in fluid communication with said at least one first manifold and said at least one second manifold.

32. A heat-transfer circuit, comprising:
   a) a heat exchanger comprising:
      i) a core having a stacking axis, a length extending along said stacking axis and a heat-transfer surface extending said length;

ii) at least one first manifold formed within said core and extending said length;

iii) a least one second manifold formed within said core and extending said length;

iv) a plurality of interconnecting channels formed within said core and spaced from one another along said length, each of said plurality of interconnecting channels having a first end fluidly communicating with said at least one first manifold and a second end fluidly communicating with said at least one second manifold; and

v) a plurality of plates stacked along said stacking axis, each of said plurality of plates having a first aperture defining a portion of said first manifold and a second aperture defining a portion of said second manifold, at least some of said plates each having at least one space defining at least one of said plurality of interconnecting channels; and

b) a fluid re-circulation system in fluid communication with said at least one first manifold and said at least one second manifold.

33. A heat exchanger, comprising:

a) a core having a stacking axis, a length extending along said stacking axis and a width extending perpendicular to said stacking axis;

b) a plurality of first manifolds formed within said core and extending said length;

c) a plurality of second manifolds formed within said core and extending said length, said plurality of second manifolds located alternatingly with said plurality of first manifolds across said width;

d) a plurality of interconnecting channels formed within said core and spaced from one another along said length, each of said plurality of interconnecting channels having a first end fluidly communicating with one of said plurality of first manifolds and a second end fluidly communicating with at least one of said plurality of second manifolds; and

e) a plurality of plates stacked along said stacking axis, each of said plurality of plates having a plurality of first apertures defining corresponding portions of said first manifolds and a plurality of second apertures defining corresponding portions of said second manifolds, at least some of said plates each having a plurality of spaces defining at least some of said plurality of interconnecting channels.

34. A heat exchanger according to claim 33, wherein the number of said first manifolds in said core and the number of second manifolds in said core differ by one.

35. A heat exchanger according to claim 34, wherein said second end of each of said interconnecting channels is in fluid communication with two of said second manifolds.

36. A heat exchanger, comprising:
   a) a core having a stacking axis and a length extending along said stacking axis;
   b) at least one first manifold formed within said core and extending said length;
   c) a least one second manifold formed within said core and extending said length;
   d) a plurality of interconnecting channels formed within said core and spaced from one another along said length, each of said plurality of interconnecting channels having a first end fluidly communicating with said at least one first manifold and a second end fluidly communicating with said at least one second manifold;
   e) a plurality of heat-exchanger plates each having a first aperture defining a portion of said at least one first manifold and a second aperture defining a portion of said at least one second manifold; and
   f) a plurality of spacer plates stacked alternatingly with said plurality of heat-exchanger plates, each of said plurality of spacer plates having a third aperture defining a portion of said at least one first manifold, a fourth aperture defining a portion of said at least one second manifold and a space defining at least one of said interconnecting channels.

37. A heat exchanger according to claim 36, wherein the number of said first manifolds in said core and the number of second manifolds in said core differ by one.

38. A heat exchanger according to claim 37, wherein said second end of each of said interconnecting channels is in fluid communication with two of said second manifolds.

39. A method of forming a heat exchanger that includes a core having a length and a surface for engaging one of a heat source or a heat sink, comprising the steps of:
   a) providing a plurality of plates forming the core;
   b) forming each of said plurality of plates such that when said plurality of plates are stacked with one another along a stacking axis to form the core, said plurality of plates define within the core a first manifold extending the length of the core, a second manifold extending the length of the core, and a plurality of interconnecting channels spaced from one another along the length, each of said plurality of interconnecting channels having a first end fluidly communicating with said first manifold and a second end fluidly communicating with said second manifold; and
   c) stacking said plurality of plates with one another along said stacking axis to form the core.

40. A method of providing a heat exchanger having a heat-transfer surface with a heat transfer capacity that varies over the heat-transfer surface, the heat exchanger having a stacking axis and the heat-transfer surface having a length extending along said stacking axis and a width extending perpendicular to said stacking axis, comprising the steps of:
  a) forming a plurality of plates each having an edge defining a portion of the heat-transfer surface and each defining at least one interconnecting channel having a flow area such that at least some of said flow areas are different from rest of said flow areas; and
  b) stacking said plurality of plates along the stacking axis.